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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,110

09/14/2006

Xianhai Chen

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EXAMINER

CHU, CHRIS H

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

05/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,110	Applicant(s) CHEN, XIANHAI	
	Examiner CHRIS H. CHU	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-17 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 9, 2009 has been entered.

Information Disclosure Statement

The prior art documents submitted by applicant in the Informational Disclosure Statement filed on March 9, 2009 have all been considered and made of record (note the attached copy of form PTO-1449).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (JP 8-194208) in view of Merck ("Polymer Dispersed Liquid Crystals" from the applicant's IDS).

Regarding claims 1 and 5, Hattori et al. discloses a liquid crystal dispersed within a polymer matrix formed by the cross-linking of a polyacrylate resin and a polyisocyanate resin in the Constitution section and paragraph 0008. Hattori et al. teaches the claimed invention except for the specific properties of the liquid crystals. Merck teaches a TL series of liquid crystals which exhibit a minimum bulk resistivity of 1×10^{12} ohm.cm and a voltage holding ratio of 98% or greater on page 7. Since both inventions relate to liquid crystals, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the TL series of liquid crystals as disclosed by Merck in the matrix disclosed by Hattori et al. for the purpose of providing a composition that has high birefringence while maintaining high stability.

Regarding claim 2, Hattori et al. teaches the claimed invention except for the specified ratio of liquid crystals to polymer. Merck discloses the ratio of liquid crystal to polymer to be between 50/50 and 70/30 on page 7. Since both inventions relate to liquid crystals, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the TL series of liquid crystals as disclosed by Merck in the matrix disclosed by Hattori et al. for the purpose of providing a composition that has high birefringence while maintaining high stability.

Regarding claim 3, the combination of Hattori et al. and Merck teaches the claimed invention except for specifically stating the driving voltage to be 280 V or less

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across an air gap of at least 15 μm . However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to do so, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 4, Hattori et al. discloses hydroxyl groups for linking in paragraph 0009.

Allowable Subject Matter

Claims 6-17 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art cited on attached form PTO-892 is the most relevant prior art known, however, the invention of claims 6-17 distinguishes over the prior art of record for the following reasons.

Regarding claims 6 and 14; the claims are allowable over the prior art of record because none of the references either alone or in combination disclose or render obvious an apparatus or method comprising a polymer dispersed liquid crystal separated from an electro-optical device, applying a voltage to a transparent electrode overlying the polymer dispersed liquid crystal and detecting a changed intensity of light transmitted by the polymer dispersed liquid crystal along with the other limitations of the claims. Claims 7-13 and 15-17 depend from claims 6 and 14 respectively.

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris H. Chu whose telephone number is 571-272-8655. The examiner can normally be reached on 8:30 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on 571-272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

Chris H. Chu
/Chris Chu/
Patent Examiner
May 22, 2009

/Uyen-Chau N. Le/

Supervisory Patent Examiner, Art Unit 2874